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WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

SEP 2 1922

REPORT FOR WEEK ENDING SEPTEMBER 2, 1922.

AKRON:

Hot weather with no relief from rain continued during the week. Showers were common over the county but the station benefitted by none. Corn has commenced to dry up and it is expected that there will be a great loss of forage from blowing during the next few weeks. The rotation corn plats were harvested Thursday and Friday. The nursery threshing was completed the fore part of the week thus completing the threshing of small grains on the station.

Mr. E. C. McCarthy is here this week end from the State Agricultural College in the interests of the sheep experiment.

Maximum temperature 97, minimum 56; precipitation .22 inch.

August passed with 22 of the 31 days showing a maximum of 90 or above.

ARCHER:

The climatic conditions have been unsettled with rather high temperatures during the day. The three light showers proved insufficient to maintain the sunflower crop, hence this crop is being harvested and put in the silo. However, there is considerable mature seed and it is expected to produce better silage than was produced last year.

The head row selections are showing a marked difference in date of maturity, manner of growth and foliage production. It is hoped that strains will be produced which will be adapted to the various conditions found in this state.

The corn selections of Northwestern Dent made during 1921 are proving superior to those grown during previous years. The corn and potato crops, on the whole, are the only crops which hold any promise of profit to the farmers of this region.

Maximum temperature 88, minimum 49; precipitation .26 inch.

BIG SPRINGS:

Weather conditions this week, have simply been a continuation of those which have prevailed for the past month, namely, hot and dry. A good rain fell in the south part of the county on the night of August 26, but only .03 of an inch fell at the station.

Practically all the milo, and many of the other grain and forage sorghums have been harvested. The dry weather caused most of them to ripen early; as a result they developed small and poorly filled heads. One increase field of milo was headed this week, and yielded about 2250 lbs. of heads per acre.

Cotton picking is getting started in good shape this week. The first bale of the season was ginned Monday, August 28. It brought 23¢ a pound with a premium of $75.00 which was donated by the merchants of the city. Since that time a good many bales have been sold, most of them going at about 21¢.

Mr. Carter, who is in charge of Soil Survey work in this State, and Mr. Bennett, District Inspector of the Bureau of Soils, were Station visitors September 2.

Maximum temperature 103, minimum 61; precipitation .03 inch.

COLBY:

Weather conditions have remained hot and dry during the week. A few of the corn plats which had dried the worst were harvested the first of the week. Milo on fall plowed ground is drying worse than on other plats, except for marginal plats, but few heads will develop on these plats. Feterita and kafir plats are not quite as far along as milo. Kafir plats are drying and may not produce seed.

Sudan grass was cut for feed the last of the week. All corn varieties are dried up or fast becoming so.

Bindweed areas were disced during the week. There are thirty areas of bindweed on the station, twenty-five of which are treated as an intensive fallow (working once each week or ten days) and five smaller areas are being hoed. Of the twenty-five areas worked intensively, five showed no bindweed plants at the time of treatment culturally this week. The others are not showing as much vegetative growth as usual. Three of the areas have not showed any vegetative growth for the past six weeks. Apparently complete isolation and treatment will eliminate most of the areas by another season.

Visitors during the week included President Jardine and Professor Call of the Kansas State Agricultural College.

DALHART:

The past week has exceeded all previous weeks for high temperatures. Three days were 100 or above, two 99, one 95 and one 94. Minimum temperatures ranged from 61 to 69. No precipitation was recorded during the week.

Crop conditions seem to be getting rather grave in this section. While the country immediately surrounding Dalhart is showing a little better crops than the country around on all sides the crop here is not promising. Feed this winter will be scarce. The local grain company is making every effort possible to get quotations on hay of various kinds but is unable to get them. It seems that hay is scarce at other points. Some ranch men have shipped their cattle to other sections or rented spare pasture from neighbors. Grass is dry enough to burn and very short on account of continued droughty weather. Prices on all feedstuff are advancing.

Considerable harvesting was done on the station during the week. Sudan grass and Sunrise kafir that were planted for seed were harvested for bundle feed instead. The late planting of Sunrise kafir and Sudan grass that were intended for feed are making an extra good showing so were gone over during the week and all hybrids pulled out so as to use these plantings for seed. Milo that was planted late for seed is also holding out wonderfully well. From present indications the milo may make as much as 35 or 40 bushels per acre. Other crops are doing their best in these dry times but the grain and forage yields will be shorter than they have been the past few years. The 1st and 2nd dates milo, 1st, 2nd, and 3rd feterita and 4th Sudan were harvested this week. The brabham and groit cowpeas were harvested for hay in the variety test. Seed was picked from the early buff and blackeye cowpeas.

GARDEN CITY:

The weather has continued hot and dry throughout the past week. Crops are continuing to fire.

Fall listing and plowing of plats in small grain last season were completed this week. Broom corn in the seed bed experiment was pulled. The continuously cropped plat of broom corn is fired so badly that another pulling will probably not be necessary. All corn on continuously cropped land is being cut today. The second date of seeding winter wheat was made on the thirty-first.

Mr. A. L. Hallsted and Mr. R. E. Getty of the Hays Branch Station, were visitors this week.

Maximum temperature 106, minimum 52, precipitation 0; evaporation 2.981 inches. Average hourly wind velocity 5.6 miles.

HAVRE:

The month of August has been warm and dry since the first week. The following table shows the precipitation April to August inclusive compared with the 40 year average:

	April	May	June	July	August	Total
1922	1.39	2.37	.90	1.90	.92	7.48
40-yr.Ave.	.84	1.89	2.78	1.78	1.22	8.51

Threshing of the rotations was completed during the last two weeks. Yields of small grains have been especially light on fall plowing. There being more failures this year than have been reported any single year since the station started.

The following table shows a summary of the yields for winter wheat, spring wheat, oats and barley on the rotations:

	Spring Wheat	Winter Wheat*	Oats	Barley
Disced Corn Land	2.7	5.4	14.2	9.5
Spring Plowing	5.4	---	16.9	7.9
Fall Plowing	3.3	2.5	1.7	2.1
Fallow	12.2	8.8	23.8	18.0
Green Manure	---	4.9	11.9	8.3
Subsoiled	---	4.5	7.9	3.4
Listed	4.2	---	9.1	3.5
Stubbled	---	1.7	---	---
Average	4.7	5.4	11.0	8.4

* Partially winter killed and reseeded to Marquis.

As noted in the table there has been an unusual stimulus due to fallow this season, when compared with other methods, especially corn land.

Corn has made but little growth during the past two weeks. Very little grain is being formed and as the leaves are burning, all plats are being harvested this week. This crop will make excellent feed due to the extreme leafiness.

Havre, continued:

All corn on the station should be cut during next week, including that that under irrigation which will be used as silage.

Crops north and west are yielding much better than on the station. Reports have been received of large fields making better than 30 bushels and this on spring plowing. This section had a heavy rain in May as well as local showers in June that did not occur at the station.

South and west (an area about 15 to 20 miles wide just west of the Bear Paw Mountains) crops are very poor. Grasshoppers have also been very bad in this section and in many places have taken what crops survived the drought.

HAYS:

The past week holds the extreme temperature record for the month, the maximum being 107 and the minimum 50. Generally the weather during the week has been very hot, with frequent hot winds and no rain. The last half of August has not only been dry but very hot.

The first two weeks of August were sufficiently dry and hot to burn up the corn which was harvested August 14. Since then the sorghums have partially matured and now are practically dried up except where the plants were very thin on the ground. Milo and kafir was harvested on all the plats September 1 and 2.

The grain yields of sorghums on the continuously cropped plats is very low, practically a failure on some of the plats. In the rotations there will probably be some yields as high as 25 or 30 bushels.

The marginal effect on the sorghum plats, especially those on continuously cropped plats is very marked this year. The outside rows have been harvested and will be threshed separately as usual to determine the difference in yield between marginal rows and the interior of the plat.

With no rain except a few widely separated showers of less than .20 inch since July 9, the ground is so thoroughly dried out the condition for seedbed preparation for winter wheat is rather discouraging.

The work on the commercial fields of the station during the week consisted largely in filling silos and stacking cane hay.

HUNTLEY:

Threshing of the Dry-Land crops was begun on August 31 and to date all but the oats and flax have been finished. Yields are somewhat above the average but not as high as the unusual amount of precipitation this season would seem to justify. Exceedingly heavy yields of straw made at the expense of larger grain returns may account for some of this discrepancy.

Considering the poor stand of winter wheat on all plats due to the wheat not coming up until April 24, the average yield of 27.3 bushels per acre is very good. The maximum yield was 41.2 bushels obtained on fallow and the minimum yield of 18.3 bushels was also obtained on fallow.

Huntley, continued:

Spring wheat ranged from 30.0 bushels on disced corn land down to 16.7 bushels on M.C.E., with the average for all plats being 24.3 bushels per acre.

Yields of barley ranged from 30.4 bushels on spring plowing down to 16.0 bushels on fallow in the M.C. series. The average of all plats was 22.1 bushels.

All grains threshed so far have weighed out well per bushel and are of very good quality though they show the weathering effect of slow ripening and are not as bright as usual.

Maximum temperature 95, minimum 47; precipitation .01 inch.

LAWTON:

Drought has been intensified by high temperatures and hot winds during the latter half of August. From August 17 to 25, inclusive, the maximum temperature ranged from 101 to 107. Only once during the month of August was the maximum temperature as low as 91.

The August rainfall amounted to .65 inch and fell in the form of four showers. The deficiency for the month amounts to 2.44 inches.

Crops of all kinds depreciated with extreme rapidity during the month. Rough feeds are very scarce, grass is short and dry, and stock water is a serious problem with most people. The live-stock market is loaded with light cattle and thin hogs and pigs, due to the shortage of feed and the demand for money.

The cotton crop will be very light in southwestern Oklahoma. On the upland there are usually three to six small bolls per plant. It is opening unusually early and present indications are that picking will be completed at an early date this fall.

Prospects for fall wheat pasture are now at a low ebb. September and October rains, however, may reverse this condition and afford much relief to live-stock farmers.

Some harvesting of grain and forage sorghums has been done on the station. In some of the varieties and especially in the late planting dates, not over 50 per cent of the plants are producing heads. Lodging is usually very extensive before the grain is matured. Practically all harvesting will be done, probably within the next week or ten days.

MANDAN:

Agronomy.

The month of August was hot and dry. No rain of value fell during the month. The total precipitation for the month was .32 inch. The precipitation of the year to September 1 was 11.98 inches, which is 1.79 inches below the 45-year mean. Maximum temperature 94; minimum 47.

Corn in the rotations has been harvested. The stalks had started to dry up badly. The yield of grain will be good, but was no doubt injured by the dry weather during August.

Mandan, continued:

Seed corn was picked during the week of August 21. The seed is of good quality, and mature.

Sorghum varieties for the Office of Forage Crop Investigations were cut during the week.

Corn and cane for silage were cut and put in the silo.

Cooperative Grazing Experiment.

The cattle in the 30-acre pasture are still on their pasture, but will no doubt need to be removed in a few days as they are getting very short of feed. The cattle made the following gains per head during August:

Pasture (acres)	100	70	50	30	Rot. (70)
Gain in pounds per head.	35.5	40.5	44.5	18.5	28.4

There are ten head of two-year old steers in each, except the rotation pasture, which is carrying sixteen head.

Aboriculture.

Hoeing and cultivating was completed for the most part this week. Mr. Emerson is in central Montana and proceeding towards Mandan. Mr. Hansen is in northern Wyoming and proceeding towards S. E. Montana and S. W. North Dakota and the way to Mandan.

An exhibit showing the extent of the Shelterbelt work was made at the Missouri Slope Fair in Mandan this week. It consisted of a map of the four states covered with tacks in townships indicating the successful plantings made, and those townships in which applications have been filed for 1923 plantings. Eight enlarged and colored photographs were also shown of successful plantings in the several states.

Visitors during the week (August 27-September 2) included Mr. C. S. Scofield, in charge of Western Irrigation Agriculture; Dr. F. E. Kempton, Pathologist in Charge of Barberry Eradication; Dr. H. L. Walster, Agronomist, North Dakota Agricultural College; Leroy Moonaw, Superintendent, Dickinson Substation; Mr. A. L. Norling, County Agricultural Agent, Washburn, N. Dakota, with a company of farmers; Orris W. Roberts, In Charge, Weather Bureau Station, Bismarck, N. Dakota; Jay G. Kiamond, Crop Reporter, Bureau of Farm Economics; James J. Conner, Supervisor, Harney National Forest. Mr. T. A. Sommers, and Mr. A. D. Deason, who also visited the station, were in charge of the Agricultural exhibit arranged by the Office of Exhibits, Department of Agriculture. This exhibit has been on display at the Missouri Slope Fair from August 27 to August 31, and dealing with problems pertaining to our semi-arid areas, has proved very interesting and instructive.

Ernest B. Brown, Office of Cereal Investigations, has returned from his trip to the Akron Experiment Farm and other stations.

Horticulture.

The weather still continues too dry for the best development of late maturing varieties of fruits and vegetables. Early varieties have been harvested for the most part, and have done very well.

Mandan, continued:

Selection work with tomatoes has been in progress throughout the week, and some strains are showing quite true to type. A large number of tomatoes have been injured by sunscald. Some selection work has also been done with muskmelons and with watermelons to develop early strains or varieties more suitable to the region.

Onions have been harvested and will yield very good compared to former years.

Redwing, Tonka, Minn. #35, Minn. #5, Minn. #6, Ojibwa, and a number of seedling plums have been picked during the week. In general, yields of plums up to the present time have been very good, and the quality has been good where the trees were not planted too close together.

Several varieties of crab apples have been harvested. Silvia, Jenkins, and Dolgo seem promising on account of their earliness and attractive appearance. All three have been hardy here of late years.

Small fruits are now being pruned, and the twigs burned in order to destroy any insects or diseases that may be present in the old canes.

The display of vegetables at the Missouri Slope Fair was quite good, although somewhat limited as to the number of varieties. It showed that vegetables are generally doing well this year. The fruit display was very limited and of poor quality.

NORTH PLATTE:

Weather for the week has continued dry and hot. Maximum temperatures of 101 and 102 degrees were recorded for August 30 and 31. This is the high record for the year so far, the highest previous record being 101 degrees on June 23.

Total rainfall for August was 2.36 inches. This is but .10 inches below normal. More than usual injury has been done to the corn crop on account of very favorable growing conditions in July causing an excessive stalk growth, followed by high temperatures and insufficient moisture during the last three weeks of August. Yields on the station will be close to normal, but many fields in the vicinity will be almost total failures. The condition of corn in this section of the state has declined close to 100 per cent during August. At the beginning of the month the condition was from 125 to 150 per cent of normal, at its close the condition will average scarcely 50 per cent of normal. This is one of many illustrations of how farming under semi-arid conditions <u>almost</u> succeeds.

Silo filling on the station is being completed today.

TUCUMCARI:

The month just ended was characterized by extreme heat and drought; the only months equaling it in heat since records have been kept, since 1905, were July 1910 and 1916, each with mean temperatures of 82. This has been the only August since 1905 when less than one inch precipitation was recorded. The August mean is 2.81 inches, while only .67 inch was received. With 11.006 inches evaporation, this August is second only to August 1918.

Tucumcari, continued:

Plant and stalk counts were made on milo in rotation and M. C. plats, while in many cases head counts were also made. So many plats failed to fully head that head counts were necessary if any of the counts were to be of any value. All milo, M. C. and rotations, in the center field was cut the past week, while heading has been begun on the plats in the north field. Yields will all be very light, even milo on fallow running below twenty bushels. Kafir is heading slowly and very unevenly on all plats; some portions of the plats are nearly ripe, while the heads are just emerging on other portions. The drought apparently hastened the maturity of milo, but delayed kafir maturity.

Sudan is heading in many cases, but since the stand is not over 15 inches to 18 inches high a second cutting will not be made, for a rank growth is necessary in the fall to hold soil from blowing. Much of the cane, both rowed and broadcast is entirely dead, while about four acres rowed and the same amount broadcast is still surviving, but making no appreciable growth.

Maximum temperature 101, minimum 64, precipitation 0. Mean for the week, 84. Average wind velocity 4.8 miles per hour.

Mean temperature in August 82; mean temperature, August, 18 years, 77. Precipitation for year ending September 1, 10.75 inches. Mean annual 17.50 inches.

WOODWARD:

During August we had twelve days with a maximum temperature over 100. Since July 20 there have been twenty-three days when the maximum was over 100. Since August 8 we have had .18 inch precipitation, falling on three different dates. Considering the lack of moisture and great heat most of the crops are standing up surprisingly well.

Cowpeas on the rotations have been cut. They made very little seed but were losing their leaves so it was thought best to harvest them.

During the forepart of the week 2600 pounds of grapes were picked; some peaches and plums were also picked. All of the alfalfa which was cut on account of webworms has been harrowed to kill the worms. Five plats of broomcorn on the D. L. A. Project and several plats on the Cereal Project were pulled during the week. A few crops of rowed crops have been harvested on the Cereal Project.

Maximum temperature 108, minimum 55, precipitation .11 inch.
Evaporation 2.758 inches. Average wind velocity 8.8 miles per hour.

SHERIDAN:

Warm weather during the past three weeks ripened corn and all forage crops rapidly. It was intended to begin threshing at the beginning of this week, but owing to the rapid ripening of the crops mentioned it became necessary to harvest them instead. All corn, except the blocks from which seed is being picked, all of the cane in the rotations. The Dakota Amber cane in the varieties, about half of the cane in the field for feed, and the Sudan grass methods of seeding have been harvested. The beans were pulled during the week, all of the cowpeas and two varieties of soy beans were harvested today. The May 15 seeding of spring wheat also was cut today.

Sheridan, continued:

Seedings of winter wheat in the Rates and Dates of Seeding have been made as usual. The August 1 seeding came up with a good stand, but was eaten to the ground by grasshoppers, and the entire seeding aprears to have been completely killed out. The August 15 seeding has been eaten some also, but the larger part is still in fair condition. Grasshoppers are also eating some of the garden stuff and the soy beans, damaging them considerably. But little damage seems to have been done to corn, cane, or the Sudan grass by the grasshoppers.

The new threshing machine was tried out last week, doing very good work. All but one of the varieties of peas were threshed at that time.

The rainfall for August was 1.27 inches, which is .97 inch above the normal. Over half an inch of this came in one shower with considerable runoff. The weather for the most of the month has been quite warm with no cool breaks.

Corn was picked for seed during the week. More has been picked so far than was possible during the two previous years. The ears are of good size, well filled, and ripened well.

Maximum temperature 95, minimum 47; precipitation .16 inch.

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BUREAU OF PLANT INDUSTRY

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REPORT FOR WEEK ENDING SEPTEMBER 9, 1922.

ARCHER:

The fore part of the week was very warm but the last two days have been quite cool. While there has been considerable cloudy weather the humidity has been rather low.

The major operations at the station have consisted in seeding the various winter wheat experiments (other than Dry-Land) and the putting up of silage. All Dry-Land plats seeded to winter wheat and which received some summer tillage are looking well. Those cropped to corn or other cereals are not doing so well. The corn is beginning to ripen.

Silage crops at the station are very much better than those grown in the immediate vicinity. It is hoped that frost will not arrive until it is harvested.
Maximum 85, minimum 36; precipitation .03 inch.

ARDMORE:

There has been very little change in weather conditions during the past two weeks. No precipitation of any consequence has been recorded since August 3.

The ground is very dry and hard, so much so that it is practically impossible to do any fall plowing either with teams or tractors.

During the week the corn crop was harvested for silage. Yields have not yet been compiled, but will not exceed two tons per acre of rather indifferent quality. The Dakota Amber sorgo crop is ripe and is being harvested with corn binders.

BIG SPRINGS:

Weather conditions, during the past week, have continued hot and dry, the same as have prevailed for the last two months. Maximum temperature has ranged from 96 to 100 every day.

This weather has caused the cotton to open up very rapidly during the week, so now nearly all farmers have full crews at work picking. The picking season, which usually extends up into the winter, will be materially shortened this season because nearly all the late squares have dried up.

Station work this week has consisted mainly of picking cotton and harvesting increase fields of Spur Feterita and Orange Cane. The feterita matured very well and will make a good yield of grain and forage, but the cane had burned considerably.
Maximum temperature 100, minimum 65; precipitation 0.

COLBY:

Weather conditions remained dry throughout the week and hot the fore part of the week, with the nights being much cooler the last two nights of the week. All sorghums except those seeded rather late are drying up quite rapidly. Some of the sorghums on the D.L.A. project are lodging where they have dried rather early. Several of the sweet sorghums are lodged quite badly in the variety test. Sudan Grass for pasture is dried up except in the drainage ditch at one end. There has been no growth since the cattle were taken off the first of the month.

Colby, continued:

Commercial fields of barley and winter wheat were threshed during the week. Barley on disced cane ground yielded 18.5 bushels and winter wheat after barley on E.F.P. yielded 17.5 bushels per acre.

Commercial fields of corn were harvested during the week.

Practically speaking there has been no rain of any benefit since harvest of the cereal crops. The precipitation for August was 1.38 inches which fell in small showers and did no good. There has been no precipitation except two local showers for a total of .19 inch, in September to date. July precipitation was 2.74 inches. Fall plowed ground has not had sufficient rain to pack it any. All ground to be seeded to wheat has been packed with the disc set straight and weighted.

Sorghums and corn on early fall plowing are drying much earlier than other treatments this year.

DALHART:

The past week has been hot but a little cooler than the two preceding weeks. Maximum Temperature for the week was 97, and minimum 61. No precipitation was recorded here during the week although there have been times that looked favorable for rain. On these occasions rain fell in adjoining territory. Last Saturday night a rain fell north of Dalhart, beginning about 22 miles north and extending about 15 miles north of Boise City, Oklahoma, covering a strip of about 43 miles. To say it is getting dry here is putting it mildly.

Crops have suffered greatly all over these plains although some sections have suffered more than others due to local showers. There is little chance left for improvement of this years' crops by rain as they have advanced to the stage where rain will do little good in most cases. For the later plantings rain will help a little if it comes before the crops dry up. They are still looking half way favorable at this time. Some methods on the station are showing up well during this dry season while others are going to be little above a failure for grain. In no case will a crop be recorded as a total failure on the station, winter rye excepted. The forage yields will be sufficient to hold out on but not up to normal as most crops are much shorter than usual. The milo, Sudan Grass and sunrise that are being grown for seed are still looking prime. Most crops on varieties and rotations will have a grain yield.

Considerable harvesting was done during the week on rotations, varieties and general field. Variety cowpeas are all harvested and some are making extra good showings. Some seed selections were made during the week on the earlier varieties that were harvested.

Work has been commenced on the mess house in putting on metal siding. This is going to make a neat looking as well as water proof house out of it. The north end is all that has been completed to date. The work is being done with station labor.

GARDEN CITY:

The hot dry weather continued until yesterday when the maximum temperature was only 87. The mean maximum temperature for the five days preceding was 100. Crops are drying up rapidly and if the hot weather continues will be ready for harvest next week. Milo on continuously cropped land and that following Sudan as green manure has fired badly.

The drilled kafir in the seed bed experiment and three plats of Sudan were cut for hay during the week. All listed plats that are to be seeded to winter wheat were lister-cultivated. Broom corn has been pulled the second time. The winter wheat seeded on August 21 and 31 has not emerged yet, due to a lack of moisture.

Professors L. E. Call and H. H. Laude of Manhattan were station visitors this week.

Maximum temperature 103, minimum 55; precipitation 0; evaporation 3.133 inches; average wind velocity 9.1 miles per hour.

HAYS:

The weather during the past week has been a continuation of drought and high temperatures accompanied by the heaviest winds of the season, which were continuous from Thursday morning until some time Friday night. The wind was very hot both Thursday and Friday and temperature did not fall below 75 Thursday night. Late Friday evening the wind did lull long enough to reverse from the south to the north, and while the wind was equally heavy, after some time the temperature dropped considerably and it has been cool today, (Saturday).

During the heavy wind and dust storm Thursday a stroke of lightening apparently out of a dry cloud struck a stack of grain on a farm adjoining the Experiment station, and fire spread as might be expected. The Experiment Station crew of men together with other men who hurriedly assembled extinguished the fire but not until after it had burned practically all of one farmer's hay and feed, part of another farmers' farm crops and a portion of the Experiment Station pasture. Today, lightening struck a large barn two and a half miles west of the Experiment Station.

The field work during the week has consisted largely in making soil moisture determinations and of working over the ditching system on the project. The old drain ditches were all scraped or cleaned out, some new ones made and new dikes constructed where needed to prevent flooding of certain plats and to carry away the run-off when (?) those hoped for heavy rains occur. As stated in last week's report, it has now been two months since a shower of .20 inch has been recorded. One extreme is apt to follow another, and although the ditching process on the Dry Land Project is now drawing some amusing remarks we believe that; "In time of drought is the best time to prepare for floods."

JUDITH BASIN:

The past week in general has been comparatively cool and cloudy. Several light showers occurred but the amount of precipitation was not sufficient to be of much benefit. In fact, rain has not been received in sufficient amounts to be of much benefit to crops since the 28th of June. The month of August, especially, was very dry, the total precipitation for this month being .41 inch or 1.03 inches less than normal.

Field work has been confined to threshing operations and harvesting of corn. Threshing of all small grains on the rotations and of all increase fields of winter wheat, spring wheat and oats have been completed and threshing of crops on the Cereal and Forage Crop projects is now in progress. The minimum, maximum and average yields of the various crops obtained on the rotations are as follows:

	Minimum Yield	Maximum Yield	Average Yield (All Plats)
Winter Wheat	20.0 bu.	35.0 bu.	30.0 bu.
Spring Wheat	10.7 "	29.8 "	20.7 "
Oats	27.5 "	57.8 "	46.5 "
Barley	20.4 "	45.2 "	32.6 "
Flax	3.4 "	14.1 "	8.9 "

The highest yields of spring wheat, oats and flax were obtained in each instance upon disced corn ground which received an application of barn yard manure the previous year before plowing the land for corn.

Despite the frequent distribution of poisonous bran mash and the killing of large numbers of grasshoppers, these pests are still very numerous and are continuing to do considerable damage. Three plats of corn on the rotations were completely stripped of leaves within two or three days and several other plats were injured to a considerable extent and it was necessary to harvest all corn on the rotations while still quite green to avoid the complete ruination of this years' results. Grasshoppers have also destroyed the vegetable garden and completely stripped the leaves from all caragana hedges and plantings of gooseberries, currants, lilacs and honeysuckles about the station buildings. A large number of poplars and other trees about the buildings and in the shelter belt experiments have also been defoliated by these pests.

Maximum temperature 90, minimum 36; precipitation .47 inch.

MANDAN:

Agronomy.

Four days of the past week have been very cool. A severe wind storm on the evening of the 2d did some damage to hay stacks, and also blew down many cane and corn shocks. Some hail came with the same storm and injured standing cane to a slight extent. A dashing rain of .79 inch which fell in about thirty minutes on the night of the 6th caused considerable washing in the south field.

Maximum 98. Minimum 46. Precipitation 1.27

No fall plowing has been done to date, but the rains of the past week should put the ground in good condition for fall work.

Cooperative Grazing Experiment.

The 30-acre steers are still on their pasture, but are starting to lose weight.

SHERIDAN:

Fair weather has prevailed the most of the week, but it has been cooler than at any time during the last month, and exceedingly windy at times. The remainder of the Corn, Sudan Grass, and all of the cane, except two varieties not yet ready, were cut early in the week.

Threshing was begun Wednesday. The remainder of the field peas was threshed, and all of the barley except the varieties. A part of the bulk oats for feed and a field of Silvermine oats for increase were threshed Friday. All of the oats in the rotations and the 60 day oats in the varieties were threshed today.

The oats in the rotations averaged 47.0 bushels per acre, running from 36.6 bushels in Rotation II-132 to 73.1 bushels in Rotation II-5. There was considerable volunteer wheat in the fall plowed plats which contributed some to higher yields on many of those plats, where oats followed wheat.

The Rotation barley made an average yield of 47.6 bushels per acre, running from 29.2 bushels on M.C.A. to 61.5 bushels on II-7. The five plats in rotation with other crops averaged 56.9 bushels per acre as compared with 38.4 bushels in the M.C. series.

Maximum temperature 91, minimum 35; precipitation 0.

TUCUMCARI:

Harvesting of corn and sorghums is well under way in this vicinity, a great acreage being harvested before full maturity in order to save it. An occasional field can be seen on the plains southeast of here where a good yield of grain will be obtained, but taking the county as a whole, the prospects are very poor. The cotton acreage of this county was greatly increased this year and it is reported farmers are estimating yields at from one-fourth to one-fifth bale per acre. A number of broom corn fields have been visited and while the yields will be light, it seems probable broom corn will be the most profitable crop in this locality this year, due to the very favorable price of brush. Brush will doubtless average about 300 pounds per acre.

Heading of milo, making stalk and plant counts, and numerous odd jobs have occupied the time the past week. Kafir is ripening very slowly and very unevenly, necessitating delay in harvesting.

Rainfall totalling .34 inch fell last evening, the 8th, but this was too small in amount to prove of much value. Much of the cane, broadcast, has been dead for weeks, while even the rowed cane on sod ground died from the effects of the drought.

Maximum temperature 99, minimum 63, precipitation .49 inch. Mean temperature for the week, 81. Evaporation 2.280 inches. Average wind velocity 4.6 miles per hour.

WOODWARD:

The past week has been hot and dry until last evening, Friday, when we had .75 inch rainfall. Fourteen out of the past twenty days had a maximum temperature of 100 or over, and the lowest maximum during that time has been 90. The rainfall last night was the first of any consequence since August 8th.

Woodward, continued:

Several varieties of cowpeas in the cowpea hay test have been harvested. The brush on one plat of broom corn which was not ready when the last was pulled, has been pulled now and all of the fodder harvested. All the corn on the D.L.A. project has been harvested. The stalks on the listed plats were so short that the row binder cutting about six inches from the ground cut some of the ears in two.

Several hundred pounds of grapes were picked, which about completes the grape crop for this year, there being only about 35 vines left to pick.

The silo on the Dairy Project had been cleaned out in preparation for refilling.

Maximum temperature 103.5, minimum 66; precipitation .75 inch. Evaporation 2.16 inches. Average wind velocity 9 miles per hour.

LAWTON:

High temperatures, moderate winds, and a large amount of sunshine prevailed during the past week. The maximum temperatures ranged from 98 to 102.

Observation taken from various parts of the county show that the cotton crop is very light. The staple is short, the fiber is weak and poorly set on the seed. Bolls are small and seed indicates a premature maturity. The crop has opened very rapidly and is going to the gin as rapidly as it can be picked.

Rough feed and grain for livestock are very scarce. Unless there is an abundance of fall and winter wheat pasture farmers will experience severe hardship before another crop is produced. The first rate and date of seeding test with wheat was made September 7.

On the night of the 9th, rain fell to the amount of 1.54 inches. This will undoubtedly encourage the seeding of considerable wheat where the ground has received some preparation.

Mr. B. M. King, of the Greenville Station, arrived on the 8th, and will take care of the cotton work at this point the remainder of the season.

AKRON:

The week passed continuing the hot dry weather reported the week before. Harvesting of row crops was continued. Considerable time was spent preparing an exhibit for the county fair which came to a successful close today. Exhibits in all departments were reported as more numerous and of better quality than at any previous fair. The trench silo was completed during the week.

Maximum temperature 95, minimum 47; precipitation 0.

NOTE:

(1) Men responsible for the management of field plats will please note that, following out the outline of subsoiling for two years and omitting it for two years, all subsoiled plats should be subsoiled in the falls of 1922 and 1923.

(2) In determining the yield of plats the weights should be recorded to the nearest pound, and the yields in bushels per acre calculated to one decimal place. On one-tenth acre plats it is not necessary to make a separate entry of the yield of straw per acre as it can be read directly from the yield per plat, but on all fractional plats the yield of "straw" per acre should be calcualted and recorded.

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WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

SEP 16 1922

REPORT FOR WEEF ENDING SEPTEMBER 16, 1922.

AKRON:

Exceptionally hot weather for the season of the year continued throughout the past week. Fall sown wheat has no chance of germinating unless it be on fallowed land and even there it is questionable. The forage experiment was harvested during the week with the exception of Orange Sorghum, which was left until better maturity or frost. The ensilage cutter arrived Thursday and time since has been devoted to filling the trench silo. Seeding is in progress today on the Cereal Project. All varieties of plums are being picked today. Burwood, Weaver, Wolf, Wyant and De Soto promise better than average yields.

Maximum temperature 92, minimum 39; precipitation .06 inch.

BIG SPRINGS:

The long spell of hot weather was broken this week when a light norther dropped the maximum temperature from 98 on September 10 to 73 on the 11th. Since that time the weather has been very moderate.

The dry hot weather has caused cotton to open very rapidly this year, and as a result the picking season will be very short if enough men can be obtained to gather the crop. At present considerable difficulty is being experienced in obtaining sufficient pickers to gather the cotton as fast as it opens. The station cotton is being picked over for the second time; another picking will be necessary, but it will be very light.

All sorghum plats, with the exception of sumac and the late dates of planting, have been harvested. The second cutting of Sudan grass in one of the increase fields is being harvested today; the crop will be light as it was made since the last rain.

Maximum temperature 98, minimum 47; precipitation 0.

CHEYENNE:

The weather has been dry for some time, with warm days and cool nights On September 9 frost occurred in the low places.

The work at the station has consisted in putting up silage. The large 14 ft. silo is full and there is nearly enough corn to fill the 12 ft. silo.

During the week the Superintendent attended the state fair at Douglas and while there had the privilege of meeting numbers of people who were interested in agricultural problems.

Maximum temperature 86, minimum 33; precipitation 0.

DICKINSON:

Corn on the Rotations was harvested September 16, being practically mature and with a good yield of both grain and forage. Filling of the silo was completed on the 15th. The yield of silage is the heaviest during the past four years.

The tower for the Wind Electric plant was raised yesterday after long delay on the part of the company in sending a man to construct the tower and assemble the plant.

DICKINSON:

Rainfall to date in September amounts to 1.28 inches. This has come in seven showers and has prevented threshing except for a few days. Almost half of the grain in the county is yet in the shock. The ground is still too dry for a good job of plowing. The minimum temperature of the week was 32 degrees but there has not been a killing frost.

GARDEN CITY:

Although no precipitation was received during the last week, the temperature was much lower than during the week preceding. Most of the sorghum crops are ripe and will be harvested in the near future. Dwarf Yellow Milo in the general fields is in the shock. Dawn Kafir will be ready to cut the last of the coming week. All late seeded sorghum will out-yield that planted early. The May fifteenth date of planting will yield scarcely nothing.

Wheat farmers are in the field every day drilling their seed in a dry loose seed-bed. The wheat seeded on the project on August twenty-first has not germinated yet.

Station visitors this week were Professor J. H. Parker, of Manhattan, and Mr. B. B. Bayles, of the Fort Hays Station.
Maximum temperature 98, minimum 45, precipitation 0. Evaporation 2.307 inches.
Average hourly wind velocity 7.9 miles per hour.

HAYS:

Continued dry weather prevails. Only a trace of precipitation recorded during the week. There was a change in temperature for the better, The maximum temperature for the week was 99, minimum 44.

Field work consisted principally in heading of kafir on the shelterbelts around the project and working on drain ditches.

The Experiment Station started two large drills today, the 16th, seeding winter wheat on the commercial fields. Other work done during the week was largely harvesting of commercial fields of kafir and stacking of feed crops.

Superintendent Aicher drove to Manhattan, Tuesday, the 19th.

MANDAN:

Aboriculture.

Shelterbelt inspections were completed September 9, the Inspectors, Ralph W. Hansen and Arthur W. Emerson arriving at Mandan on the evenings of September 9 and 10, respectively. Both men left on Wednesday evening for Rapid City, South Dakota, to take up their second year of study at the School of Mines.

Fall observations and measurements have been completed in all of the experimental blocks and combinations on the station. The maximum growth in height for all species was found in the block of Northwest Poplar, planted in 1915 and at one point in the row of Chinese Elm in the main windbreak planted in 1913. Both species showed a height of twenty-five feet. The topography in each case was such as to give the trees the advantage of additional water from runoff as compared to the average planting site for the station. Trees generally have made an excellent growth this season.

Mandan, continued:

Horticulture.

Harvesting has been in progress all week both of fruits and vegetables. Averything in the acre garden has now been harvested except parsnips, rutabagas and late cabbage. Yields of all crops have been exceptionally good this year. All varieties of plums are now ripe and have been picked. Very good yields were secured from Wyant, Forest Garden and Cheresota. The yields from other varieties were considerably damaged by the storm of September 2, much fruit being bruised or knocked off the trees. Crab apples especially suffered, causing the crop of this fruit to be somewhat lighter than was expected.

Agronomy.

The past week has been cold and rainy. More rain has fallen so far this month than for any other September since the station started. A light frost occurred on the night of the 14th.

Maximum temperature 73, minimum 37; precipitation 1.03 inches. Total precipitation for September to date 2.31 inches.

Rain interfered with field work and has delayed threshing of feed fields and flax in the rotations and for the Office of Cereal Investigations.

Fall plowing was started during the week. The soil is in better condition for plowing than it has been at this time for four or five seasons.

Winter Rye and winter wheat were seeded in the rotations during the past week. Winter Rye has been put into the series of continuous cropping that has been occupied by winter wheat. The flax in the two year rotations was discontinued at the close of this season. Winter Rye has been put in two rotations of the flax series and winter wheat in one rotation drilled into stubble.

Cooperative Grazing Experiment.

The cool weather has caused the cattle to shrink and they are making very light gains at present. The 30-acre steers will be moved to the reserve pasture early in the week, as they are now losing weight rapidly.

The clipped quadrats have been completed for the season. There was practically no growth of native vegetation during the month of August.

NORTH PLATTE:

Winter wheat seeding is under way on the station. About half of the farmers in the vicinity are also beginning to seed. Dry weather continues and very little wheat will germinate, unless rain comes, except on summer tilled ground.

A lister drill is being tried out on half of the winter wheat plats in field 44

All corn plats have been cut and shocked. The yields will be close to normal.

TUCUMCARI:

The remainder of the milo in the north field was headed this week and stalk and plant counts were completed on kafir and a number of date and variety plats. All kafir in rotations and M.C. plats, a number of plats of date tests, and nearly all variety plats of both grain and forage sorghums were cut and shocked this week. A few plats in the date work will make fair grain yields. There will be light yields of grain on all rotation and M.C. kafir plats, while the great majority of grain and forage sorghums in the variety plats made no grain.

Stalks were so short that it was necessary for a man to follow binder, clearing the bundles and untied stuff out of the way. Plants on some plats averaged only two feet, so it was difficult to tie a fair percentage of these.

Early in the week the M.C.A. wheat and rye plats were plowed. The soil was so dry that it was impossible to do a satisfactory job of plowing. Unless a fair amount of rain falls, seeding of wheat and rye will be inadvisable. On the plains southeast of here thousands of acres of wheat land is prepared for seeding, but this will be delayed until rain falls. Sufficient rain has been received on the plains so land could be prepared for fall seeding. In some localities sorghum crops are a total failure, while in other parts of the county fair to poor crops will be harvested. Grass is very short and it is doubtful whether rains now would result in sufficient grass growth to provide much winter pasture, for a killing frost may be expected within three or four weeks.

Professor Lantow, of the State College, spent some time here early in the week, in an endeavor to determine whether the Station crop would be sufficient to warrant again conducting a steer feeding experiment. Tentative plans were made, subject to growth of Sumac cane the next few weeks, to carry two lots of eight or ten steers each, one lot being fed Sumac fodder, the other Sumac silage, each receiving ground milo and cottonseed meal. If crops had been good, about fifty steers, divided into five lots, would have been carried.

G. S. Quesenberry, Extension Agronomist, and Messrs. Hollinger and Strong, County Agents, in adjoining counties, were among the Station visitors this week.

Maximum temperature 95, minimum 51, precipitation .29 inch.
Evaporation 1.855 inches. Average wind velocity 4.3 miles per hour.

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WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

SEP 23 1922

REPORT FOR WEEK ENDING SEPTEMBER 23, 1922.

ARCHER:

The weather has continued very dry with high temperatures during the day and cool at night. This condition ripened the corn which at maturity was cut and shocked. The stands were 100 per cent on all plats hence the yields of this crop will represent the cultural methods as effected by the season.

Threshing is in progress and will be completed in a few days.

The winter wheat seeded on fallow and green manure plats is in a 100 per cent condtion. Other seedings are practically nil. The experiments with the disc furrow drill are showing up unusually well, very much better than the plats seeded with common disc drill. On the experimental plats testing out the date of plowing for fallow the seedings on the early summer plowing have produced very much better stands and growth of wheat than the spring plowing.

The usual seeding of 22 varieties of winter wheat on the fortieth acre plats has been accomplished and the grain is up with a fair stand on fallow land but on the oat stubble the ground is so dry that germination is impossible.

The studies of variation in sunflowers is progressing and definite results are being secured. Seed corn selections have begun and studies are also in progress. This work is accomplishing the desired end.

The corn crop produced from selected seed shows a marked decrease in the number of ears left in the field when harvested with a corn binder than the original commercial seed.

The following are the results of a feeding experiment with dairy cows investigating the comparative feed value for milk production of sunflower silage as compared with corn silage:

DAIRY COWS AT ARCHER
CORN ENSILAGE OR SUNFLOWER ENSILAGE
These tables show results of feeding each ensilage two seasons to Shorthorns and Holsteins.

#2.
1920 - 1921
1921 - 1922

	Shorthorns		Holsteins	
No. Cows in each lot	Sunflowers: 3	Corn: 3	Sunflowers: 3	Corn: 3
No. Days in test	84	84	84	84
Av. Weight at beginning of experiment	1087		1101	
Av. Daily gain or loss of lot for Total periods on each ration	-.13	*3.1	*8	*2.0
Av. Daily Ration:- Grain per head (lbs.)	10.33	10.33	12.0	12.0
Alfalfa per head (lbs.)	15.13	15.59	17.01	16.84
Sunflower Silage per head (lbs.)	29.83		29.93	
Corn Silage per head (lbs.)		29.93		29.98
Av. Daily Milk per cow	27.37	27.87	35.01	36.05
Av. Daily B.F. per cow	1.00	1.01	1.07	1.11

* Note: Star indicates plus

Archer, continued.

#3.

	Mixed Breeds	
	Sunflowers	Corn
No. Cows in each lot	6	6
No. Days in test	84	84
Av. Weight at beginning of experiment	1094	
Av. Daily gain or loss of lot for total period on each ration	*.34	*2.5
Av. Daily Ration:-		
Grain per head (lbs.)	11.16	11.16
Alfalfa per head (lbs.)	16.07	16.21
Sunflower Silage per head (lbs.)	29.88	
Corn Silage per head (lbs.)		29.95
Av. Daily Milk per cow	31.19	31.96
Av. Daily B. F. per cow	1.03	1.06

Maximum temperature 84, minimum 35; precipitation .10 inch.

BIG SPRINGS:

The dry,cool, weather this week has provided almost ideal conditions for cotton picking; as a result cotton is being gathered just as fast as help can be obtained. While the staple is short this year, cotton as a whole is making a fairly good grade.

Station work this week has consisted mainly of seeding broom corn, shucking corn, and hauling in the second cutting of Sudan grass. The corn, which promised well during the early summer, simply dried up to almost nothing. A very light yield of poor quality corn is being obtained. The second cutting of Sudan grass, which was made since the last rain, is yielding better than a half a ton per acre.

Maximum temperature 92, minimum 51; precipitation 0.

COLBY:

Weather continues dry and the days for the past week have been rather warm for this time of the year. No frost to date with a minimum temperature of 37 degrees. The soil is very dry, it being a rare field where there is moisture enough to cause the wheat to germinate.

Seeding of winter wheat was completed on the Station on the 22d. The D. L. A. plats were seeded on the 20th. Practically all the plats were dry but firm. It has been rather hard to leave a rough seed bed because of the showers being just large enough to slack the clods on the fall plowing since the plowing date. The late fall plowed plat is cloddy but is well packed down. We do not expect any germination until it rains.

Winter wheat varieties were seeded on the 22d and 23d. In addition to the winter wheat varieties 24 strains and varieties of wheat were planted in triplicate in rod rows in the winter hardiness project.

Colby, continued.

The wheat false wire worm, Eleodes opaca Say, has made its appearance in numerous places over the county and is exacting a heavy toll from the earlier sown fields. Some fields which we have visited, at farmers' suggestions, are a total loss. The wheat false wire worms, are present in sufficient quantities to eat all of the wheat kernels, as it is too dry for the wheat to germinate.

GARDEN CITY:

Early fall weather--warm days and cool nights--prevailed throughout the past week. Although no moisture was received the sorghum crops do not look much worse than they did a week ago. On account of the dry seed beds some of the nearby farmers are deferring their wheat planting until after a rain is received.

All of the first date of seeding sorghums have been harvested and the later dates will be ready to harvest in the near future. Practically all the milo on the project will be ready to harvest this week.

Silo filling is in progress on the station. Some of the irrigated forage sorghums have yielded above 20 tons of ensilage to the acre.
Maximum temperature 90, minimum 42; precipitation 0.

HAYS:

Weather continues dry but slightly cooler. The maximum temperature for the week 93, minimum 41, precipitation .04 inch.

Field work during the week has consisted largely in a final effort to reduce the size of the clods on many of the plowed plats and the larger blocks, and finish seedbed preparation for wheat.

Soil samples were taken on most of the plats to be seeded to winter wheat which are being studied for soil moisture.

One hundred pounds of poison bran mash was spread over the project where the grasshoppers are numerous.

Plat C in rotation 502 was dynamited September 22. This is much earlier than the dynamiting is usually done, but it was thought best to take advantage of the dry and hard condition of the ground, as the dynamiting is much more effective when the ground is hard than when it is moist and soft.

Commercial field work has consisted largely in drilling winter wheat. Three six-horse drills have been running all week. Other work being done is shocking of the sorghum crops all of which have been cut, and stacking of a light crop of alfalfa hay.

HUNTLEY:

The harvesting of corn, beans and miscellaneous forage crops has been completed and the ground is being prepared for planting winter wheat and rye. Unless we have precipitation enough to put moisture into the seed bed soon, planting will be postponed for a while. Though fallow and green manured plats appear to have a good supply of moisture to a depth of three feet, the surface eight inches

Huntley, continued.

is dry in many cases, thus leaving as dry a seed bed in these plats as in stubbled plats.

Maximum temperature 94, minimum 38; precipitation .03 inch.

MANDAN:

Agronomy.

The past week has been very favorable for field work. No hard killing frosts have occurred to date.

Maximum 92. Minimum 33. Precipitation 0.

Fall plowing was completed during the week.

Threshing of feed oats and barley have been completed as well as brome grass, wheat grass, and alfalfa. The alfalfa seed crop is very light.

Cooperative Grazing Experiment.

The 30-acre steers were moved to the reserve pasture on September 18. They lost 470 pounds during the last 20 days on their pasture. There was still a large amount of Pasture Sage (Artemisia fugida) in the pasture which they refused to eat. The cattle of the other pastures made slightly larger gains during the fore part of September than they made during the month of August.

Aboriculture.

Height measurements of all trees in a given row have been taken during the past week in the experimental blocks planted in 1918, for the purpose of comparing the effect of different spacing distances and of pruning and mulching on the same combination of shelterbelt trees. These blocks are made up of a ten row combination set out in the following order- Buffalo Berry, Acute leaved Willow, Boxelder, Ash, Boxelder, Northwest Poplar, Ash Boxelder, Red Willow, Tartarian Maple. Spacing distances are 4 by 4, 4 by 8, and 4 by 12 feet.

A preliminary summary of the measurements taken for ash in the 4 by 4 and 4 by 8 blocks, which were clean cultivated and not pruned, gives the following averages for height and diameter at the base. (It is noted that the two rows of Ash in each combination differ in respect to adjacent species. Row #4 has Boxelder on each side, and Row #7 has Northwest Poplar on one side and Boxelder on the other)

	Spacing	Av. Height	Av. Diameter.
Boxelder, Ash, Boxelder combination.	4' by 8'	5.5 feet	1.33 in.
	4' by 4'	6.2 "	.99 in.
Northwest Poplar, Ash Boxelder Combination.	4' by 8'	5.5 "	1.30 in.
	4' by 4'	5.76 "	.99 in.

The new "Liberty Bridge" linking up Bismarck and Mandan, and providing a continuous highway from eastern points to the Yellowstone Park and the Pacific, has been officially opened this week with elaborate formalities including a pageant which required nearly 1000 actors, and, reproducing historical episodes associated with the history of the Missouri Slope, was successfully staged by a Minneapolis Corporation.

Mandan, continued.

Mr. Ernest B. Brown, Office of Cereal Investigations, with headquarters here, left on Tuesday for the Dickinson substation, and the Akron Experiment Farm. Mr. R.L. Webster, Entomoligist at the North Dakota Agricultural College, visited the station on Friday.

NORTH PLATTE:

Temporary relief from the dry conditions which have prevailed for some time was afforded by a rain of .39 inch early in the week. This moistened the soil so that most of the wheat already seeded will probably germinate. The acreage normally seeded to winter wheat in this section is being reduced somewhat this year on account of unsatisfactory conditions for seeding.

Late fall plowing for corn and spring grains is being done on the D.L.A. plats. The soil is breaking up very cloddy.

SHERIDAN:

All grain in the Rotations except the flax, all of the Rates and Dates of seeding wheat, and all of the varieties of grain except a few of the wheat varieties have been threshed. The weather for the past two weeks has been ideal for threshing, but work on the station has been delayed considerably by engine trouble. Threshing was discontinued the last three days of this week to take care of the grain and some other miscellaneous work on the station. The most of the plats in the rotations to be fall plowed were also plowed at this time. The potatoes in Rotation 37 were dug. These potatoes yielded at the rate of 119 bushels per acre, and were of good quality.

	Average	High	Low
Winter Wheat	26.7 bu.	33.8 Rot. 85	11.7 MCF
Spring Wheat (Arnautka)	29.3	34.7 15	18.7 MCF
Check Plats	32.7	42.3 Plat 24	24.2 Plat 29

The check plats were seeded to Peliss wheat on Disced Sorghum ground. This is the highest average yield of spring wheat yet secured at this station. The yields of winter wheat were exceeded both in 1918 and 1920.

TUCUMCARI:

Weather conditions the past ten days have undergone a marked change. Maximum temperatures have ranged from 67 to 87, while minimums have run between 54 and 59. Following the extremely hot weather of the past two months, the past week has seemed very cool. Increase cane seems to be growing well, since .42 inch of rain fell early in the week. Wheat and rye on M. C. plats were seeded the 20th.

Work has consisted of painting, fanning cowpea seed and wheat, selecting seed, seeding broomcorn, pulling sucker rod and putting new leathers on one of the wells, and other odd jobs. Headed milo will be ready to thresh within ten days, while kafir and other shocked sorghum will require some weeks before threshing can be done.

Evaporation 1.552 inches. Average wind velocity 3.3 miles per hour.

WOODWARD:

Since September 8 we received 2.71 inches of precipitation in five showers. The weather has remained fairly cool and wheat sowing over this section of the State has been going forward very rapidly. Most of the time during the past two weeks has been spent in preparing the ground for sowing wheat and rye. A small amount of harvesting has been done and the last of the grapes, with the exception of one vine, have been picked.

The County Fair was held the latter part of last week and was very well attended. The exhibits were not quite up to those of last year but were very good considering the dryness of the season. The Station had a small exhibit consisting of sorghums, cowpeas and grapes.

On Saturday, the 16th, the last day of the Fair, a Farmers' Lunch and picnic was held at the Station and about 300 visitors were present. Mr. Carl Williams, Editor of the Oklahoma Farmer-Stockman and Mr. George Bishop, of Oklahoma City, were the speakers of the day. Everyone seemed to enjoy the picnic and many favorable comments were heard on the appearance of the crops and the Station in general.

On the 20th and 21st, Mr. C. J. Stauber, and Mr. L. F. Locke, visited several dairy herds and vineyards and orchards in Harper and Beaver counties.

Maximum temperature for two weeks-------93
Minimum temperature for two weeks-------47.
Evaporation for two weeks ----------3.775
Average wind velocity for two weeks----5.2

WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

SEP 30 1922

REPORT FOR WEEK ENDING SEPTEMBER 30, 1922.
(Except as otherwise indicated.)

AKRON: September 23.

Seeding of the rotation winter wheat and rye plats was completed the first part of the week. The ground is so dry, even on the fallow plats, that there appears but slight chance that the wheat will germinate. The rate-and-spacing corn experiment was harvested the later part of the week and the ground seeded to winter wheat. Filling of the trench silo was completed. Nursery seeding has been in progress on the Cereal Project at odd times during the week.

Mr. E. J. Maynard of the State Agricultural College visited the station in the interest of sheep experiment.
Maximum temperature 92, minimum 39; precipitation 0.

AKRON: September 30.

The two sheep rotation fields were reseeded to Kanred, using 30 pounds to the acre. The first seeding was made in the later part of August. Moisture has been just sufficient to germinate a large part of the first planting without supporting growth. The remainder of the forage experiment was harvested as well as the kafir plats on the rotation block. An increase field of Red Amber and of Freed's Sorgo was harvested the first part of the week. Some time was spent reconstructing the fence around the north pasture.

Doctors Shantz, Marbut, and Baker visited the station for a short time today. Mr. E. B. Brown returned yesterday to look after the harvesting of his corn-breeding experiment.

August passed with 1.24 inches of precipitation; 13 year average 2.31. September passed with .06 inch of precipitation; 13-year average 1.75. There has been but .06 of an inch recorded since August 22.
Maximum temperature for the week 85, minimum 38; precipitation, trace.

ARCHER:

The weather has continued dry, but has been very threatening. However, there has been no frost but from the appearance of today there has been a change in weather conditions.

The work at the station has consisted in finishing threshing and during this forenoon the last of the corn crop from the Dry-Land plats was weighed and stored.
Maximum temperature 76, minimum 38; precipitation .01 inch.

BIG SPRINGS:

The cool, dry, weather, which has prevailed during the past week has allowed cotton picking to continue uninterrupted. It is estimated that about forty per cent of the crop has been gathered up to date.

The station cotton is now being picked over for the third time. With the exception of the late dates of planting, this time over will get all the cotton as all the bolls are now open. The first part of the week some Sudan grass was threshed; about 500 pounds of fine quality seed was obtained. One increase field of Sumac and some of the late dates of kafir and milo were harvested this week. The sumac will make about five or six tons of good quality feed per acre.

Maximum temperature 91, minimum 53; precipitation 0.

BELLEFOURCHE:

No precipitation other than a trace was recorded during September. It was one of the warmest Septembers on record and all crops matured in good shape.

The corn plats have all been husked and weighed. The yields have not been computed as yet, but the average yield will be at least 40 bushels per acre.

Fall plowing has been completed. The surface six inches of soil was very hard but beneath that the soil was mellow and plowing was not as difficult as usual.

Winter grains have not been planted as yet on account of the exceedingly dry condition of the surface soil. It has been impossible to work down the soil on plowed land sufficiently to make an even fairly good seed bed. The surface of land not plowed is so hard that it is doubtful if a drill would be able to penetrate deeply enough for the seed to be covered.

No killing frost has as yet been recorded.

Maximum temperature 93, minimum 41 ; precipitation 0.

COLBY:

Weather conditions remained warm and dry during the week, no precipitation or frost to date. There is not sufficient moisture in the soil to germinate wheat except in a few spots. The wheat false wire worm continues to do considerable damage, where its presence is indicated.

Milo plats were harvested during the week. Milo lodged very badly this year on most of the treatments. Yields of grain will be fairly light.

Feed cutting and silo filling has been completed, except one field of milo which will be cut the first of the next week. This year because of its earliness Feterita will make the best grain yield of any of the grain sorghums.

Colby, continued.

Wheat sowing is not being finished over the county mainly for two reasons, one that the soil is too dry to insure germination and the other is that there are some delaying seeding because of the wheat false wire worm. From a comparable standpoint the dates of seeding winter wheat will all be late, because wheat seeded a month ago has not yet germinated.

DALHART:

Climatic conditions remain unchanged as far as soil moisture is concerned. No rain has occurred in this section the entire month. For the past two weeks the weather has been cool, so cool at times that a fire was necessary during the day. There have been a number of cloudy days with threatening rain but nothing came of all this.

Field crops have continued to burn although not so much as it did during the extreme hot weather. Harvesting has been going on steadily over the past three weeks. As soon as plats matured sufficiently they were harvested. Some were harvested without putting out a head. This was done in order to get the forage yield before all the leaves dropped off. Most of the grain sorghums have produced grain that will exceed a half crop. Some will be very little below normal. In another week all the experimental plats will be harvested.

Besides the harvesting of crops the work has consisted of general repair work. The station buildings have been gone over or are in process of going over for repairs before the painting starts. A small tool room and repair shop is under construction and will have a forge installed. Construction work is done with station labor.

Mr. D. R. Burnham and Mr. Hamilton, "County Agent", Tucumcari, were station visitors during the week. They came to Dalhart to do some seed selection work so as to get seed for the Tucumcari station for next year. They returned to Tucumcari Friday morning.

GARDEN CITY:

With high wind velocity and little precipitation the crops have fired badly during the past week. The soil is still too dry and loose to warrant wheat planting.

Field operations for the week have consisted of harvesting the sorghums. The only plats left standing are of kafir in the seedbed and lister planted plats, and the last two dates of planting. Some of the later maturing varieties are drying up rather than maturing. Fallowed plats are showing up much better than those that are continuously cropped.

Maximum temperature 97, minimum 51; precipitation .07 inch.

HAYS:

The weather story for the week is simply one of continued drought, the only difference being heavy wind all week. Each day with the exception of two has closed with a heavily clouded sky, but the clouds each morning passed away successfully without spilling more than a few drops of water on the experiment station. However, rains are being reported a little closer every few days.

Hays, continued.

During the week 112 plats of winter wheat were drilled. It has all been laid in the dust, moisture being too deep to attempt to reach with the drill.

The spreading of poison bran mash continues at intervals for the benefit of the grasshoppers that are loafing about the wheat plats.
Maximum temperature 94, minimum 53; precipitation .09 inch.

HUNTLEY:

The first frost of the season occurred on the morning of September 29 when the minimum temperature reached 29°. This temperature was sufficient to kill sorghums and the vegetables remaining in the Dry-Land garden.

Fall plowing is well under way and though the ground is very dry and breaks up lumpy, the work is being pushed while teams are available for it.

Winter wheat varieties were seeded yesterday and planting of winter wheat and rye is being done on the rotations today.
Maximum temperature 91, minimum 29; precipitation 0.

LAWTON:

Since the rain of 1.54 inches on September 10 the temperatures have been decidely lower. Since that date the maximum temperature has ranged from 62 to 92 with an average of 86. The minimum varied from 49 to 67 with an average of 61. During this same period the wind velocity averaged only 2.8 miles per hour.

As will be seen from the above data the weather has been very favorable to the picking of the cotton crop which is fortunate for the farmer. The crop matured early and bacame subject to severe weather damage should windy or other disagreeable weather prevail.

On the sand soils that have been well cultivated the yield will range from one fifth to one third of a bale per acre. On the tight up-land it will range from almost nothing to a bale on eight or ten acres.

The staple in all sections is poor and the quality of the fiber is only fair. This is true of practically all varieties and farmers, as usual, under such circumstances, are uncertain as to the variety that will meet their approval for future planting.

The production of sorghum crops for feed and grain on the sand and on the tight land also offiers a very striking contrast. Some very good kafir and forage sorghums were raised in the eastern end of the county on sandy soil. In the western end of the county where the heavy, tight land prevails there is practically no feed.

Considerable wheat has been seeded in this county but only a few fields in favored locations are showing any germination or growth. North and west of Lawton through Kiowa, Washata, Custer, and Roger Mills counties the seeded acreage is larger and germination in most cases has been rapid and vigorous. Going farther north and west beyond the Canadian river the condition is still better.

Lawton, continued.

Harvesting of all crops on the station was completed about the 20th of September. The first picking of cotton was completed on the 26th. Although a second picking will have to be made the amount of cotton gathered will be light.

MANDAN:

Agronomy.

The past week has been favorable for all field work. No frost occurred during the period.

The total rainfall for September was 2.31 inches. The 45-year mean for September is 1.27 inches. The total precipitation for the year to date is 14.29 inches, or .17 above the 45-year mean.

Maximum 86. Minimum 30. Precipitation, Trace.

Winter wheat and Winter rye are up to good stands, and are making good growth.

The only field work done during the week was hauling in some corn husked in the field, and corn fodder. Corn husking on the plats has not been done to date.

Root crops for the Office of Forage Crop Investigations were also dug.

Cooperative Grazing Experiment.

The gains of the cattle during the month of September were very good for this time of year. The following gains in pounds per head were made during month.

Pasture (Acres)	100	70	50	30	Resv (70)
Pounds per head gain	50	38	20.5	*	36.6

* 470 pounds loss during first twenty days; 490 pounds gain during the last ten days on reserve pasture.

If the cattle hold their own during the next three weeks the total gains for the season will be the highest obtained since the experiment started.

Mr. G. G. Ainslie, from the Bureau of Entomology, Mr. H. L. Westover from the Office of Forage Crop Investigations, and Mr. R. A. Oakley from the Office of Congressional Seed Distribution, visited during the week.

Aboriculture.

Measurements of the height and diameter of all trees in a given block or row continued throughout the week. A number of interesting comparisons are furnished by these data. The following table presents certain differences occurring in the growth of a block of Green Ash and one of the Boxelder planted in 1915. These blocks are units in the Species Testing Series and were planted in ten rows of ten trees each spaced 4 by 4 feet apart.

Mandan, continued.

HEIGHT GROWTH IN FEET

	Aggregate height of all trees measured	Number of trees measured	Average height in Feet.
Green Ash Blk.#79			
All trees,10 rows	931.0	94	9.90
Two outside rows	229.1	20	11.45
Eight inside rows	701.9	74	9.11
Boxelder, Blk.#111			
All trees, 10 rows	1184.8	97	12.20
Two outside rows	238.9	19	12.57
Eight inside rows	945.9	78	12.12

DIAMETER GROWTH AT BASE IN INCHES.

	Aggregate diameter of all trees measured	Number of trees measured	Average diameter inches.
Green Ash, Blk. #79			
All trees, 10 rows.	156.7	75	2.089
Two outside rows	35.9	14	2.564
Eight inside rows	120.8	61	1.980
Boxelder, Blk. #111			
All trees, 10 rows	140.7	52	2.746
Two outside rows	35.9	11	3.609
Eight inside rows	101.0	41	2.463

NORTH PLATTE:

Dry warm weather continues. No precipitation has occurred during the week. Only two showers totaling .60 on the Table and .87 inch on the Bench have occurred, during the month. The September normal is 1.50 inches. Temperatures are still running high. The line of average killing frost is being crossed today, September 30. Minimum temperatures during the week have held in the lower 50's and upper 40's. The minimum for the month was 37 degrees.

Winter wheat seeded the 15th and 16 is up with good stands on summer tillage and early fall plowing. But few plants have emerged on late fall plowing or corn land. Examination shows that but little sprouting has taken place.

SHERIDAN:

The remainder of the wheat varieties, the rye, and flax were threshed during the week. There still remains a small amount of mixed grain from the roadways in the cereal work, some sorgo, and Sudan grass for station seed to be threshed.

The flax in the Rotations averaged 10.4 bushels per acre. The highest yield was 14.1 bushels on spring plowed oats ground in Rotation 248, and the lowest 6.1 bushels on M.C.F.

The month of September was dry throughout, there being but one light shower with .15 inch precipitation, and another trace during the past week. Maximum temperature 91, minimum 30; precipitation, Trace.

TUCUMCARI:

Wheat and rye on the M.C.C. plats, seeded September 21, were up to a good stand on the 28th, while the A and B plats, seeded the same date, have germinated to only a limited extent.

Weather has been pleasant and warm the past week and sorghums in shock will soon be ready to thresh. Corn was hauled, weighed and husked during the week. Yields will be very light due to the drought, corn borer and ear worm.

Twenty loads of cinders, fifty cubic yards, were hauled from town the past week for use on station roadways. Quite a number of tanks of water have been hauled to trees and shrubs recently, in an attempt to keep them alive.

Maximum temperature, 87; minimum, 55. Average wind velocity, 5.3 miles per hour. Evaporation, 2.001 inches. Precipitation, 0. Precipitation for September 1.20 inches; evaporation 8.174 inches; mean temperature 74, or four degrees above eighteen year mean.

WOODWARD:

The past week has been fairly warm with no precipitation of any consequence. Practically all of the wheat and rye that was planted on the D.L.A. plats the latter part of last week is up to a good stand. Practically all of the work done during the past week has consisted of selecting seed in the fields and harvesting. All of the sorghum crops on the D.L.A. Project, with the exception of the sumac have been harvested, and most of the fields with the exception of what is being saved to fill the silo have also been harvested.

The last vine of grapes was picked today. The peach orchard is being treated with para dichloro-benzene to kill the borers.

W. M. Osborne, and Mr. King, of the Lawton Station, visited the station on the 25th and 26th. Mr. Sieglinger went with them as far as Hobart on their return. Mr. E. F. Chilcott, left the night of the 28th to visit the State Fair, at Oklahoma City.

Maximum temperature 90, minimum 55; precipitation .06 inch. Evaporation 1.524 inches. Average wind velocity 6.1 miles per hour.